Development through the Private Sector Series
Technical Note No. 53



November 2026

The Business Cycle and Trade Finance Flows From Multilateral Development Banks: Evidence From IDB Invest

Authors:
Nelson Chacón
Marielle Del Valle
Rodolfo Stucchi

IDB | Invest

IDB | Invest

The Business Cycle and Trade Finance Flows From Multilateral Development Banks: Evidence From IDB Invest

Copyright © 2026 Inter-American Investment Corporation (IIC). This work is licensed under a Creative Commons IGO 3.0 Attribution-NonCommercial-NoDerivatives (CC-IGO BY-NC-ND 3.0 IGO) license (http://creativecommons.org/licenses/by-nc-nd/3.0/igo/legalcode) and may be reproduced with attribution to the IIC and for any non-commercial purpose. No derivative work is allowed.

Any dispute related to the use of the works of the IIC that cannot be settled amicably shall be submitted to arbitration pursuant to the UNCITRAL rules. The use of the IIC's name for any purpose other than for attribution, and the use of IIC's logo shall be subject to a separate written license agreement between the IIC and the user and is not authorized as part of this CC-IGO license.

Following a peer review process, and with previous written consent by the Inter-American Investment Corporation (IIC), a revised version of this work may also be reproduced in any academic journal, including those indexed by the American Economic Association's Econ-Lit, provided that the IIC is credited and that the author(s) receive no income from the publication. Therefore, the restriction to receive income from such publication shall only extend to the publication's author(s). With regard to such restriction, in case of any inconsistency between the Creative Commons IGO 3.0 Attribution-NonCommercial-NoDerivatives license and these statements, the latter shall prevail.

Note that link provided above includes additional terms and conditions of the license.

The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank Group, its respective Boards of Directors, or the countries they represent.

Cover design: Greta Design

Photo Credit: Shutterstock

November 2026

The Business Cycle and Trade Finance Flows From Multilateral Development Banks: Evidence From IDB Invest*

Nelson Chacón† Marielle Del Valle‡ Rodolfo Stucchi§

November 2026

Abstract

Despite the expansion of global trade finance markets, firms in developing economies still face structural barriers that restrict their access to trade finance, especially during economic downturns. This paper examines whether IDB Invest's Trade Finance Facilitation Program (TFFP) operates countercyclically by analyzing program activity across 15 Latin American and Caribbean countries between 2005 and 2024. Using a panel data framework with country fixed effects and a range of macroeconomic and institutional controls, we find that TFFP financing increases during periods of economic weakness, consistent with a countercyclical role. We further assess whether operational reforms introduced in 2017 enhanced this responsiveness. The results suggest that while the reforms did not significantly alter the program's countercyclical behavior, they were associated with higher levels of financing. These findings underscore the important role multilateral development banks can play in narrowing trade finance gaps and sustaining firms' access to international markets during periods of economic stress.

Keywords: trade finance, business cycle, multilateral development banks, Latin America and the Caribbean

JEL Classification: E32, E44, G15, N26

* We thank Irani Arraiz, Christian Volpe, and Lucas Figal for their valuable comments and constructive suggestions on earlier versions of this paper. Their feedback helped strengthen the analysis and manuscript. The opinions expressed in this paper are solely those of the authors and do not necessarily reflect the views of the IDB Group, its respective Boards of Executive Directors, or the countries they represent. All remaining errors are our own.

† Development Effectiveness Division, IDB Invest. Email: [nchacon@iadb.org]

‡ Development Effectiveness Division, IDB Invest. Email: [marielled@iadb.org]

§ Inter-American Development Bank. Email: [rstucchi@iadb.org]

1. Introduction

Trade finance plays a critical role in supporting international trade by addressing firms' liquidity constraints and mitigating transaction-related risks. Firms engaged in cross-border transactions face substantial upfront financing needs, extended delivery periods, exchange rate volatility, and payment risks stemming from differences in legal and regulatory frameworks across jurisdictions. These constraints are particularly pronounced in emerging and developing economies, where information asymmetries, less developed financial markets, and elevated sovereign risk often restrict access to external financing. Although trade finance has historically been characterized by low default rates, access to these instruments remains uneven across countries and tends to contract during periods of economic stress, exacerbating existing financing gaps and hindering firms' participation in international trade.

Recent estimates suggest that the global trade finance gap has widened substantially, increasing from approximately $1.5 trillion in 2018 to $2.5 trillion in 2023 (Beck et al. 2023), with the largest shortages concentrated in developing economies. Moreover, access to trade finance tends to be procyclical.[1] During economic downturns and episodes of financial stress, commercial banks typically become more risk-averse, tightening lending standards, scaling back trade finance exposures, and reducing correspondent banking relationships. As a result, access to trade finance can deteriorate precisely when firms face greater liquidity constraints and heightened uncertainty. Evidence from the Global Financial Crisis (2008-2009) and the COVID-19 pandemic suggests that disruptions in trade finance availability can amplify declines in international trade, particularly in countries with less developed financial systems (Committee on the Global Financial System 2014; International Finance Corporation 2020).

While a growing body of literature has examined the relationship between trade finance and economic crises, considerably less attention has been devoted to understanding the extent to which multilateral development banks (MDBs) can mitigate these cyclical contractions through dedicated trade finance programs. Existing research has primarily focused on the importance of trade finance for supporting trade flows or narrowing trade finance gaps, while

[1] Access to trade finance tends to contract further during economic downturns, not only because of declining trade demand but also due to shifts in bank behavior and liquidity conditions. The literature shows that banks become more risk-averse in periods of stress, tighten lending standards, and cut back on trade finance exposures to preserve capital and liquidity, even for short-term instruments traditionally considered low-risk (Wang and Ronci 2006); (Ronci 2004). This behavior contributes to the procyclicality of trade finance, amplifying downturns in cross-border transactions.

relatively limited empirical evidence examines whether MDB-backed trade finance programs operate countercyclically. Addressing this question is particularly relevant in Latin America and the Caribbean (LAC), a region characterized by recurrent macroeconomic shocks, diverse sovereign risk profiles, and persistent constraints in access to international trade finance.

This paper contributes to the literature by examining whether IDB Invest's Trade Finance Facilitation Program (TFFP) operates countercyclically in LAC. Since its inception in 2005, the program has sought to alleviate constraints in access to trade finance, address market failures that limit the supply of trade credit and provide liquidity during periods of economic distress. The study makes four main contributions. First, it provides novel evidence on the cyclical properties of an MDB trade finance program. This complements related literature documenting the countercyclical behavior of MDB financing for sovereign lending, fiscal flows, and infrastructure mobilization (Galindo and Panizza 2018; Avellán, Galindo, and Lotti 2021; Avellán, Galindo, and Lotti 2022; Avellán, Galindo, Gómez, et al. 2024; Avellán, Galindo, Lotti, and Rodríguez 2024), which to date has not been extended to MDB-backed trade finance instruments specifically. Second, it analyzes nearly two decades of data (2005-2024) spanning 15 LAC countries and multiple episodes of economic and financial turmoil, including the Global Financial Crisis and the COVID-19 crisis. Third, it evaluates the impact of operational reforms introduced after 2016,[2] examining whether they expanded the program's reach and financing capacity and strengthened its countercyclical role. Fourth, leveraging quarterly data from 15 countries between 2005 and 2024, it evaluates the robustness of this relationship across institutional phases, model specifications, and sovereign risk environments. Together, the findings contribute to a better understanding of how MDBs can help stabilize access to trade finance and sustain international trade during periods of heightened economic uncertainty.

Using quarterly administrative data on TFFP financing combined with macroeconomic indicators, we estimate fixed-effects panel models to assess the cyclical behavior of the program. The results consistently reveal a negative and statistically significant relationship between GDP growth and TFFP disbursements, suggesting that the program increases financing when economic conditions deteriorate. The estimated effect remains robust across alternative specifications and sensitivity analyses, including controls for

[2] A 2016 independent review identified concentration in large financial institutions and reduced activity in underserved markets and guarantee instruments; IDB Invest introduced reforms from 2017 to improve targeting and monitoring of TFFP operations. Further details are provided in Section 5.2.

disbursement persistence, expansion of the program's institutional network, sovereign risk indicators such as Emerging Markets Bond Index (EMBI) spreads and sovereign credit ratings, and the extraordinary operational measures adopted during the COVID-19 crisis.

We also find that the operational enhancements IDB Invest implemented after 2016 were associated with a significant expansion in TFFP activity, while the program's countercyclical behavior remained intact. Overall, the results point to an important role for MDBs in stabilizing the supply of trade finance and mitigating cyclical contractions in credit availability, thereby helping sustain cross-border trade and firms' participation in international markets during periods of heightened uncertainty.

It is important to note that the analysis evaluates the cyclical behavior of TFFP disbursements rather than the aggregate supply of trade finance. Consequently, the results should be interpreted as evidence of the program's responsiveness to economic conditions, rather than as a direct measure of trade finance availability in participating economies. More broadly, aggregate trade finance outcomes reflect the combined actions of multiple market participants, of which the TFFP represents only one component.

The remainder of the paper is organized as follows. Section 2 presents the conceptual framework and reviews the relevant literature on trade finance, market failures, and the potential countercyclical role of MDBs. Section 3 describes the TFFP, the data sources, and the main descriptive evidence. Section 4 outlines the empirical methodology and presents the main econometric results. Section 5 presents robustness checks and alternative specifications. Section 6 concludes.

2. Conceptual Framework and Literature Review

2.1 Trade Finance, Market Failures, and Economic Downturns

Trade finance plays a critical role in facilitating international trade by bridging the timing gap between shipment and payment and by mitigating risks associated with cross-border transactions. Instruments such as letters of credit, guarantees, documentary collections, and short-term trade loans reduce information asymmetries and counterparty risks that arise when buyers and sellers operate under different legal, regulatory, and institutional environments (Committee on the Global Financial System 2014).

Despite its relatively low historical default rates, access to trade finance remains subject to important market failures. Information asymmetries between lenders and borrowers often limit the ability of banks to accurately assess transaction risk, particularly in developing countries where financial information may be scarce or unreliable. Moreover, trade finance transactions are frequently affected by sovereign risk and the availability of correspondent banking relationships, all of which influence the willingness of international banks to provide credit (Auboin 2021).

These constraints tend to intensify during periods of economic and financial stress. Economic downturns are typically associated with higher uncertainty, deteriorating borrower balance sheets, increased risk aversion, and tighter liquidity conditions. As a result, commercial banks frequently reduce credit exposures, shorten maturities, and retrench from higher-risk markets. Such behavior can generate a contraction in trade finance supply even when underlying trade transactions remain economically viable (Ronci 2004; Wang and Ronci 2006).

The procyclical nature of private trade finance has been documented in several periods of economic disruption. During the Global Financial Crisis, disruptions in trade credit markets contributed to the sharp decline in international trade flows observed worldwide (Amiti and Weinstein 2011). Similar concerns re-emerged during the COVID-19 pandemic, when increased uncertainty and heightened risk perceptions reduced access to trade finance in many developing economies (International Chamber of Commerce 2020; Auboin 2021). These episodes suggest that market-based trade finance may become scarce precisely when firms need it most.

The dynamics may be particularly relevant in emerging markets, where sovereign risk plays a critical role in shaping access to trade finance. Trade finance transactions depend heavily on correspondent banking relationships and cross-border credit lines, both of which are sensitive to changes in country risk perceptions.[3] Rising sovereign spreads, credit-rating downgrades, and heightened macroeconomic uncertainty may lead correspondent banks to reduce exposures, increase pricing, or withdraw from specific jurisdictions altogether.

[3] For the purpose of this paper, we use two complementary measures of sovereign risk. EMBI spreads capture market perceptions of sovereign risk and fluctuate with financial conditions, while sovereign credit ratings reflect broader assessments of creditworthiness and institutional fundamentals. Using both measures allows us to assess whether the relationship between economic conditions and trade finance varies according to both short-term market sentiment and longer-term country characteristics.

Consequently, economic downturns may simultaneously reduce the supply of private trade finance and increase the demand for alternative sources of financing.

In this context, MDBs may play a countercyclical role by helping sustain access to trade finance when private markets retrench. Through guarantees, risk-sharing arrangements, and their ability to leverage strong credit ratings, MDB-backed trade finance programs can mitigate the effects of heightened risk aversion and sovereign risk, helping preserve access to cross-border financing during periods of economic stress. However, the extent to which these programs systematically expand their activity in response to deteriorating economic conditions remains an empirical question.

2.2 Why Multilateral Trade Finance Programs May Be Countercyclical

The existence of these market failures provides the main economic rationale for MDB intervention in trade finance markets. Unlike private financial institutions, MDBs are designed to support economic activity in situations where financing constraints prevent markets from allocating capital efficiently, particularly during periods of heightened uncertainty and financial stress.

Trade finance facilitation programs can address these constraints through several channels. First, guarantee instruments reduce counterparty risk by partly substituting the credit risk borne by confirming banks. Second, MDB participation may help alleviate information asymmetries by providing an additional layer of due diligence, monitoring, and signaling. Third, MDB-backed instruments can support access to correspondent banking relationships and international credit lines, helping local financial institutions maintain cross-border trade operations during periods of market disruption. Finally, these programs may provide risk-sharing mechanisms that can sustain financing when private institutions become reluctant to maintain exposures to higher-risk borrowers or jurisdictions.

As a result, MDB-supported trade finance programs may exhibit countercyclical behavior. During economic downturns, when uncertainty rises and private financial institutions retrench, demand for MDB-backed instruments may increase as firms and banks seek alternative sources of financing and risk mitigation. Conversely, during periods of strong economic growth and ample liquidity, commercial financing is generally more readily available, reducing the relative importance of MDB intervention.

The countercyclical role of MDBs has been documented across a broad range of development finance activities. Existing evidence suggests that MDBs tend to expand

lending during periods of economic distress, thereby acting as stabilizing agents when private capital flows decline (Humphrey and Michaelowa 2019; Humphrey 2022). However, considerably less is known about whether similar patterns also characterize specialized trade finance programs, whose short-term nature and close linkages to international banking markets may shape their response to economic fluctuations differently.

Based on this conceptual framework, the central hypothesis of this paper is that, if the trade finance program effectively mitigates financing constraints that become more binding during economic downturns, its level of activity should increase as economic conditions deteriorate. Accordingly, a negative relationship between GDP growth and TFFP financing would provide evidence consistent with countercyclical program behavior.

2.3 Related Literature and Contribution

The literature relevant to this study falls into three broad categories: research on the relationship between trade finance and international trade, studies documenting trade finance gaps and the underlying market failures that constrain supply, and analyses of the countercyclical role of MDBs in mitigating financing disruptions during economic downturns.

The first group examines the role of trade finance in supporting international trade flows. Early contributions by Ronci (2004) and Wang and Ronci (2006) show that reductions in trade finance availability during periods of financial stress can significantly constrain international trade, particularly in emerging markets. The importance of trade finance became especially evident during the Global Financial Crisis of 2008-2009, when the collapse in trade flows exceeded the decline in global output. Ahn et al. (2011) argue that disruptions in trade credit markets contributed materially to the sharp contraction in global trade, highlighting the critical role of financial intermediation in sustaining cross-border transactions. Related evidence by Amiti and Weinstein (2011) further demonstrates that shocks affecting banks can have significant effects on export performance, emphasizing the close relationship between financial conditions and international trade.

A second group of literature focuses on persistent market failures and the resulting trade finance gap. Although trade finance is generally considered a low-risk asset class, firms in developing economies continue to face substantial difficulties accessing trade-related credit. The Bank for International Settlements identifies information asymmetries, regulatory constraints, and correspondent banking limitations as key factors restricting supply (Committee on the Global Financial System 2014). Similarly, surveys conducted by the Asian

Development Bank estimate a global trade finance gap that has expanded significantly in recent years, reaching approximately $2.5 trillion worldwide (Beck et al. 2023). Evidence from the International Chamber of Commerce (2020) and Auboin (2021) suggests that these constraints become particularly severe during periods of economic uncertainty, when banks adopt more conservative lending practices and reduce exposure to higher-risk markets. As a result, economically viable trade transactions may remain unfunded despite relatively low expected default rates.

More recently, researchers have emphasized the role of sovereign risk and correspondent banking relationships in shaping access to trade finance. Niepmann and Schmidt-Eisenlohr (2017) argue that banks play a central role in overcoming information frictions inherent in international trade transactions. However, when sovereign spreads increase or country creditworthiness deteriorates, international banks often reduce exposures, raise costs, or withdraw from specific jurisdictions altogether. These dynamics imply that trade finance availability may exhibit procyclical behavior, declining precisely when firms face heightened financing needs.

The third group examines the role of MDBs as providers of countercyclical financing. A substantial literature finds that MDB lending tends to increase during periods of economic distress, helping stabilize investment and economic activity when private capital flows contract. Humphrey and Michaelowa (2019) argue that MDBs are often able to continue providing financing during economic crises when private lenders reduce their exposure, reflecting their strong financial position and development mandate. Humphrey (2022) further emphasizes that MDBs increasingly serve as stabilizing institutions within the international financial architecture, particularly during episodes of elevated uncertainty.

Despite this growing literature, empirical evidence on the cyclical behavior of MDB trade finance programs remains remarkably limited. Most existing studies focus either on aggregate MDB lending or on the relationship between trade finance and trade flows. Comparatively little attention has been devoted to understanding whether specialized trade finance facilities operated by development finance institutions expand during economic downturns, thereby compensating for contractions in private credit supply. This gap is particularly notable in LAC, a region characterized by recurrent macroeconomic volatility, heterogeneous sovereign risk profiles, and persistent trade finance constraints.

This paper makes four main contributions to the literature. First, it provides one of the first long-term empirical assessments of the cyclical behavior of a multilateral trade finance

program. Second, it expands the limited evidence available for LAC, a region largely overlooked in previous studies of trade finance facilitation programs. Third, by focusing on the behavior of the financing instrument rather than its ultimate trade outcomes, the paper offers a direct test of whether MDB-supported trade finance serves a countercyclical function. Finally, leveraging quarterly data from 15 countries between 2005 and 2024, the paper evaluates the robustness of this relationship across alternative model specifications, sovereign risk measures, and institutional phases of program implementation.

3. The Trade Program, Data, and Descriptive Statistics

3.1 The Trade Finance Facilitation Program (TFFP)

Given the persistent challenges that developing countries face in accessing trade finance, MDBs play a pivotal role in expanding market access while also providing technical assistance and capacity-building support. In response to these needs, several MDBs have established specialized trade finance programs. Among them, the Inter-American Development Bank (IDB) launched the TFFP in 2005 to provide financial solutions and technical guidance to banks in LAC, thereby strengthening their access to international trade finance markets.

The program is currently one of the two pillars of IDB Invest's Trade and Supply Chain Finance (TSCF) activities, focusing on cross-border traditional trade finance. The TFFP supports the internationalization of LAC exporters and importers by expanding and diversifying available trade finance sources, while helping preserve liquidity during periods of market volatility and economic uncertainty. By mitigating financing constraints and facilitating cross-border transactions, the program aims to support the continuity and growth of international trade across the region.

The financial products currently offered under the program include loans and guarantees extended through revolving, uncommitted, short-term credit lines to banks, which are renewed annually. TFFP credit guarantees are issued in favor of global confirming banks to cover the commercial and regulatory risks they assume when accepting eligible trade instruments issued by LAC banks. These guarantees encompass a range of instruments, including documentary and standby letters of credit, international guarantees, promissory notes, bankers' acceptances, and bills of exchange. They have a tenor of up to three years and may cover up to 100% of the eligible instrument.

TFFP loans, on the other hand, are bilateral or syndicated facilities extended to LAC banks to finance their international trade portfolios. Eligible instruments include import and export loans originated by the borrower up to 180 days prior to, or 90 days after, IDB Invest's disbursement date. The tenor of TFFP loans ranges from a minimum of three months to a maximum of three years. Pricing for both products is market-based.

Today, the TFFP network includes 88 financial intermediaries (LACFIs) across 21 countries in the region, along with more than 110 correspondent banks in 21 countries worldwide. In addition to gaining access to a broader range of trade finance products, participating LACFIs gain access to correspondent banking relationships and international trade finance networks.

Since its launch in 2005, the TFFP has expanded considerably in both scale and scope. Initially, the program only offered U.S. dollar-denominated guarantee instruments. Over time, the program broadened its product offering to better meet the evolving needs of financial institutions in the region. In 2008, the program introduced loan products and expanded its guarantee facilities to include other major currencies, including the euro, the yen, and the Swiss franc.

A decade after its inception, the TFFP reached an important milestone in 2013, when total disbursements surged to a historic peak of $1.2 billion. Building on this momentum, the program's ceiling was raised in 2016 from $1 billion to $1.5 billion, reflecting growing demand for its products and services. A new phase began in 2016 with the establishment of IDB Invest, under whose management the TFFP was subsequently placed.

In 2016, an independent review of the program identified an increasing concentration of operations among a relatively small number of large financial institutions, a declining presence in more challenging markets, and a reduced use of guarantee instruments. These findings raised concerns regarding whether the program was effectively reaching market segments where trade finance constraints were more severe.

Beginning in 2017, IDB Invest introduced a series of operational reforms aimed at strengthening the targeting and monitoring of TFFP activities. The reforms placed greater emphasis on underserved institutions and markets facing stronger financing constraints, while also promoting the use of guarantee instruments. These changes provide a useful setting to assess whether the relationship between TFFP financing and economic conditions evolved following the program's reforms and operational enhancements after 2016.

During the COVID-19 crisis, the program expanded its operations substantially. To respond to the disruptions caused by the pandemic, the TFFP's overall limit was doubled from $1.5 billion to $3 billion, enabling the program to scale up its support across the region. As a result, TFFP-supported trade volumes increased by an additional $1 billion in 2020, reaching its highest level on record and reflecting a substantial expansion in trade finance activity during the crisis.

In 2020, a total of 63 credit lines were approved, expanded, or reactivated, representing nearly $2 billion in commitments. The majority of new or reactivated lines that year focused on markets with greater needs.[4] Trade finance disbursements rose by 63% year-on-year, reaching $2 billion. Loans represented 67% of the 2020 portfolio, with the remaining 33% composed of credit guarantees.

The pandemic year was accompanied by a substantial expansion in both the scale and geographic reach of TFFP activity. Average disbursements in 2020 were 94% higher than during the 2017-2019 period, with particularly strong growth in countries facing greater development and financing constraints. Disbursements also increased significantly in more developed markets, reflecting the broad-based disruption to trade finance conditions during the crisis. Overall, the evidence suggests that the program expanded both its volume of activity and its regional coverage during this period.

Descriptive evidence also points to a sustained increase in TFFP activity following the COVID-19 shock. Average quarterly TFFP disbursements per country rose from $18.4 million during 2017-2019 to $34.5 million during 2022-2024, indicating that program utilization remained above pre-pandemic levels even after the acute phase of the crisis had passed. This pattern suggests that the pandemic was associated not only with a temporary surge in trade finance demand, but also with a subsequent period of higher operational scale.

3.2 Data

The empirical analysis is based on quarterly, country-level TFFP disbursements from 2005 to 2024, obtained from the program's administrative records. To capture fluctuations in economic activity, we use the year-on-year growth rate of real GDP, sourced primarily from

[4] This includes credit lines for banks in Small and Island (S&I) countries, which are particularly vulnerable due to their geographical condition, and countries in Group C&D according to the IDB Group's classification, which includes countries with higher vulnerability and/or lower income level. For this reason, the IDB Group has specific institutional targets to support countries classified as S&I or C&D.

the IMF's International Financial Statistics (IFS) database and supplemented with data from national authorities when necessary.

The unbalanced nature of the panel reflects the gradual operational expansion of the program rather than missing observations. A country enters the sample when the first eligible financial institution in that country joins the TFFP and receives financing. As a result, the absence of observations prior to entry reflects the lack of TFFP activity rather than missing data. Limiting the analysis to periods in which all countries are simultaneously represented would substantially reduce the sample period and exclude a significant portion of the program's operational history.

The analysis is based on an unbalanced panel dataset spanning more than 20 years of program operations. The panel includes 15 countries[5] between 2005 and 2024, with country coverage ranging from 51 quarters in Chile and El Salvador to 78 quarters in Brazil, generating a total of 1,006 observations.

To examine the potential heterogeneity in the relationship between trade finance disbursements and economic activity across countries, we introduce two additional categorical variables. The first, *finrisk*, classifies countries according to their level of sovereign risk using the Standard & Poor's (S&P) credit ratings. The variable takes values from 1 to 3, representing low-, medium-, and high-risk categories, respectively. A value of 1 is assigned to countries with the strongest sovereign ratings[6] while a value of 3 corresponds to countries with the weakest ratings, and therefore, the highest level of perceived risk.

The second variable captures sovereign risk using the EMBI.[7] Countries are categorized according to whether their EMBI spread at the end of each quarter is below or above the 500-basis-point threshold, a level commonly associated with heightened sovereign risk. The "Low Risk" group (≤ 500 bp) comprises Brazil, Chile, Panama, and Peru, and accounts for 27% of the total observations. The "High Risk" group (> 500 bp), consisting of Belize and Nicaragua, represents 13% of total observations. A third set of countries moved across the threshold over time, displaying EMBIs in both categories across different quarters (60%). This group includes Argentina, Bolivia, Costa Rica, the Dominican Republic, Ecuador, El Salvador,

[5] Argentina, Belize, Bolivia, Brazil, Chile, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, and Peru.

[6] Some countries are assigned to different finrisk categories in different periods of the analysis, according to changing S&P ratings. The country classification used in Table 1 is based on the sovereign credit ratings assigned to each country as of the end of 2024.

[7] EMBI sovereign spread data were obtained from Central Bank of the Dominican Republic. EMBI measures the sovereign bond spread of an emerging market relative to U.S. Treasury bonds and is widely used as an indicator of country risk.

Guatemala, Honduras, and Paraguay. This classification provides a dynamic perspective on sovereign risk conditions within the LAC region and supports the heterogeneity analysis conducted in the econometric estimations.

The sample distribution by country-risk defined by the two metrics is shown in Table 1.

Table 1: Classification of Countries by Country-Risk Metrics

Finrisk **categories**	**S&P rating**	**Countries, 2024***	***EMBI*** **categories**	**Countries**	**% of obs.**
1	AAA, AA, A, BBB	Chile (A) Panama (BBB) Peru (BBB+)	≤ 500 bp – Low Risk	Brazil, Chile, Panama, Peru	27
2	BB, B	Bolivia(B+) Brazil (BB-) Costa Rica (B) Dominican Republic (BB-) Ecuador (B-) El Salvador (B-) Guatemala (BB-) Honduras (BB-) Nicaragua (B-) Paraguay (BB)	> 500 bp – High Risk	Belize, Nicaragua	13
3	CCC, CC, C, D	Argentina (CCC+) Belize (CCC+)	Both Groups**	Argentina, Bolivia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Paraguay	60

* In each period, countries are assigned to different categories according to changing S&P ratings. This classification reflects the classification of countries based on the ratings assigned at the end of 2024.

** Most countries moved across the 500-basis-point EMBI threshold over the sample period, recording spreads on both sides of the cutoff in different quarters.

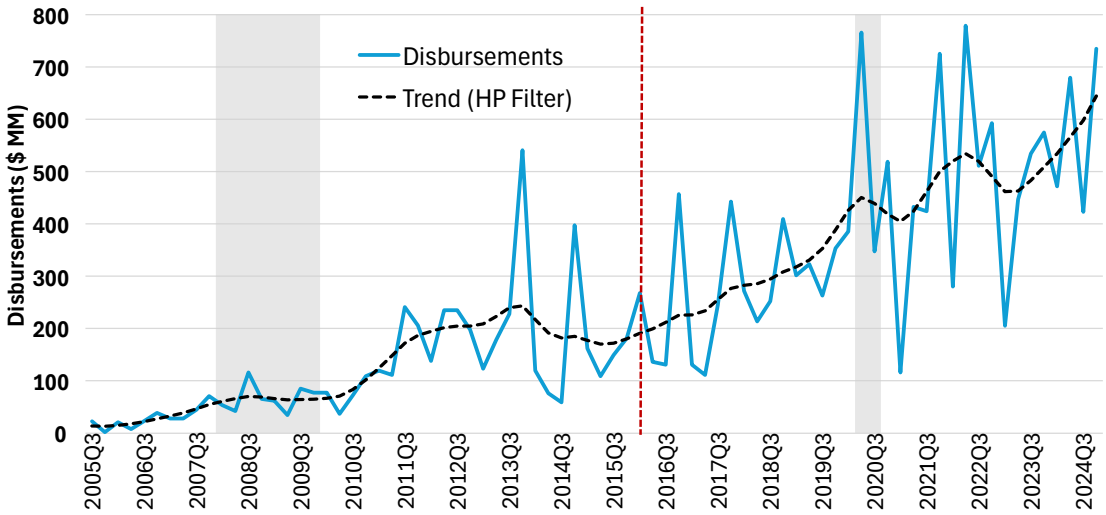
3.3 Descriptive Analysis

3.3.1 TFFP Operations and Economic Cycles

A visual inspection of TFFP operations suggests a steady expansion of the program over time (Figure 1). The upward trend becomes particularly pronounced after 2016, reflecting a sustained scaling-up of the program. The series also displays several spikes, most notably in 2013Q4 and again in 2020Q2. The latter coincides with the program's response to the COVID-19 crisis, during which average year-on-year GDP growth across the 15 LAC countries contracted by more than 15 percentage points. The sharp increase in disbursements during this period is in principle consistent with a countercyclical response, especially in 2020Q2, when the retrenchment of the international financial system from trade finance markets was most acute (Auboin 2021).

In contrast, the data do not reveal an equally pronounced response during the 2008-2009 Global Financial Crisis. Although economic activity contracted sharply across the region, TFFP disbursements did not increase substantially, suggesting a more muted countercyclical role.[8]

Figure 1: TFFP Financing (2005Q3-2024Q4)



Notes: The trend (black dashed line) was estimated using the Hodrick-Prescott (HP) filter with a lambda factor (λ) of 6.25. Disbursements are the sum of country disbursements. Gray areas show global recessions. The period 2008-2009 corresponds to the global recession triggered by the subprime mortgage crisis, while 2020Q2-Q3 corresponds to the global recession caused by the COVID-19 pandemic. The red dashed vertical line marks the structural shift of the program.

[8] A complementary binscatter illustrating the negative relationship between GDP growth and TFFP financing is presented in Appendix A.

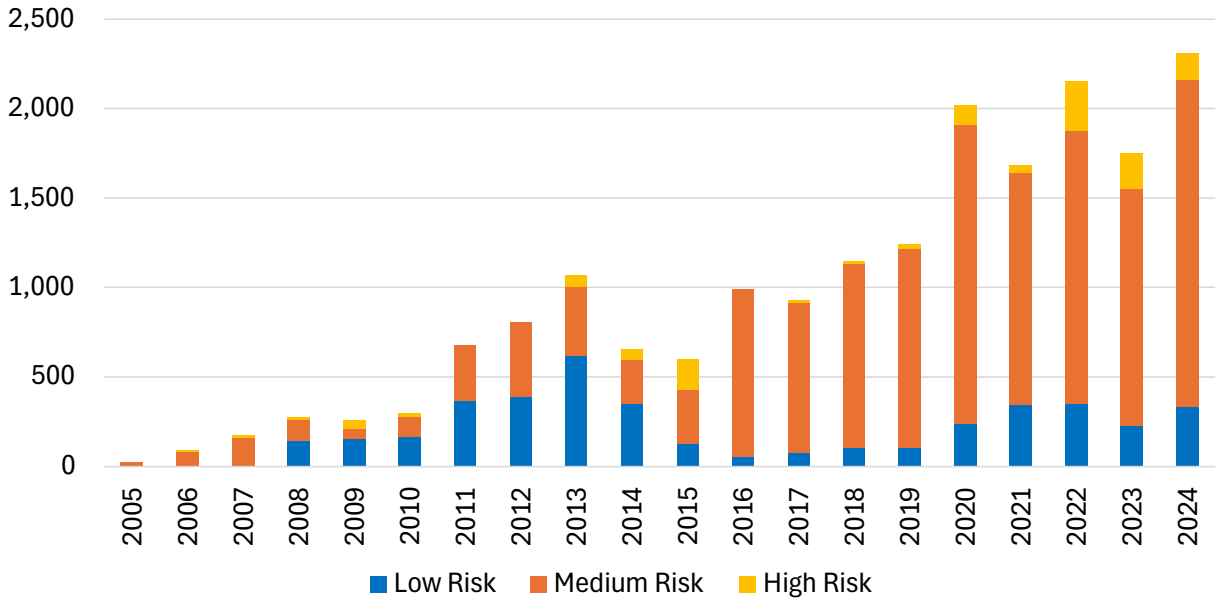
The year 2020 marked a significant shift in TFFP activity, underscoring the program's capacity to respond during a period of severe and prolonged economic stress. In 2020Q2, as year-on-year quarterly GDP growth across the region fell to nearly -20%, TFFP disbursements surged to an unprecedented level. This response was facilitated by a temporary increase in the program's ceiling from $1.5 billion to $3 billion, which remained in effect through the end of 2021, resulting in a sustained provision of trade finance to the region.

Although GDP growth subsequently rebounded, the volatility of TFFP disbursements remained high through 2021-2022, with several sharp spikes that align with residual pandemic-related disruptions and financial tightening episodes. From 2022 onward, GDP growth stabilizes to modestly positive levels, while disbursements continue trending upward, suggesting a sustained increase in the scale of the program during a period of modest economic growth. By 2023-2024, the smoother upward trend in disbursements (as shown by the dashed line) indicates a consolidation phase in which the TFFP remains significantly larger than in pre-pandemic years, pointing to a structural expansion of operations beyond the immediate crisis response.

3.3.2 TFFP Operations Across Sovereign Risk Profiles

The evolution of TFFP operations across sovereign-risk profiles, measured by S&P ratings, reveals a clear pattern in the program's resource allocation across countries and over time (Figure 2). During the first years (2005-2010), disbursements remained relatively modest and concentrated in low- and medium-risk countries, with virtually no operations in the highest-risk country group. As the program expanded, disbursements increased steadily across all risk groups, although growth was mostly driven by medium-risk countries (those rated BB and B), which emerged as the main recipients of TFFP support. This pattern persisted throughout the sample period and became even more pronounced after 2015, suggesting that the program consistently serves economies facing intermediate levels of sovereign risk.

Figure 2: TFFP Disbursements ($ Millions) by Country Risk (S&P) (2005Q3-2024Q4)



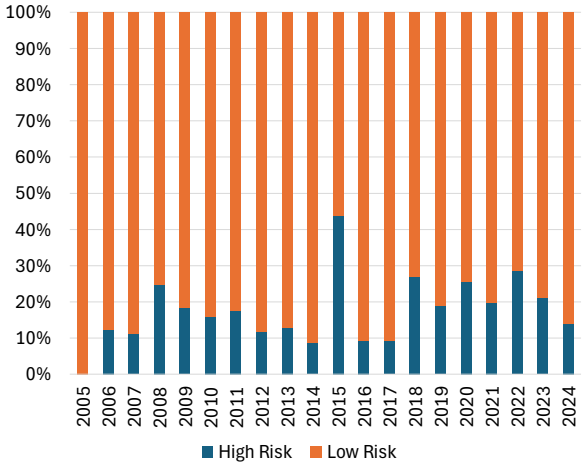
A pronounced shift emerged in 2020, when TFFP operations expanded sharply in response to the COVID-19 crisis. Financing increased across countries in all sovereign-risk categories, including a notable rise in support to the highest-risk economies (CCC and below). This broad-based expansion is consistent with a countercyclical response, whereby the program scaled up its operations during a period of acute financial stress and global liquidity shortages. While medium-risk countries continued to account for the largest share of TFFP activity, financing to higher-risk countries increased more markedly than in previous years, suggesting a greater willingness to support markets facing heightened external financing constraints. Part of this pattern may also reflect sovereign rating downgrades during the pandemic, which mechanically increased the share of financing classified as directed to higher-risk countries. Nevertheless, the evidence suggests that the program broadened its support across the risk spectrum without altering its longstanding concentration in medium-risk markets.

Following the pandemic economic crisis, TFFP operations remained high, while the share of financing associated with countries classified as high-risk stabilized at a more moderate level. This pattern suggests that, while the program consistently channeled the majority of its resources toward lower-risk markets – likely reflecting prudent risk-management

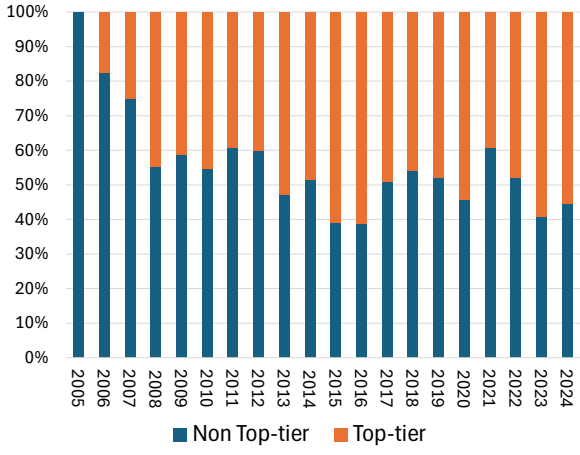
practices – it also systematically expanded support to higher-risk countries during periods of acute systemic stress. By the end of the evaluation period, record-high operations are observed alongside a more diversified allocation across risk-tier countries, indicating a broader geographic distribution of operations and the program's capacity to scale countercyclical support during periods of systemic financial strain, particularly toward intermediate- and high-risk countries.

Figure 3 – Panels A and B illustrate the evolution of TFFP operations across countries classified by EMBI risk spread and bank size.[9] Throughout most of the sample, low-risk countries accounted for the majority of TFFP financing, generally representing approximately 75%-90% of total financing. The sharp increase in the share of high-risk countries in 2015 was largely driven by greater financing to banks in Argentina, classified as high-risk, and Brazil, which temporarily switched to the high-risk category in 2015. Together, TFFP financing in these countries represented most of the financing directed to high-risk countries that year. Brazil's return to low-risk classification explains the sharp 2016 decrease in TFFP's concentration in high-risk countries.

Figure 3: TFFP Financing by EMBI Spread and Bank Size (as % of Total Financing, 2005Q3-2024Q4)



(a) Panel A



(b) Panel B

[9] For the purposes of this study and TFFP evaluations, a bank is classified as top-tier if its share of total assets in the country's financial system is equal to or greater than 10%.

Beyond this temporary spike, the figure suggests a moderate yet sustained increase of TFFP financing in high-risk countries after 2018 (between 20% and 30% of total TFFP activity). Initially, this trend was driven primarily by Argentina and Ecuador, which together accounted for more than 90% of financing to high-risk countries in 2018 and nearly all such financing in 2019. Following the 2020 crisis, however, TFFP financing in high-risk countries became more geographically diversified, with growing financing in El Salvador, Costa Rica, Honduras, and Bolivia.

3.3.3 Financing Patterns by Bank Size

Figure 3 – Panel B presents TFFP financing by bank size, dividing them between top-tier and non-top-tier institutions. [10] During the program's early years, non-top-tier institutions accounted for the majority of financing, representing roughly 70% to 90% of total financing. Over time, however, the distribution became more balanced as the share of financing directed to top-tier banks increased. Since the mid-2010s, top-tier institutions have generally accounted for about half of total program financing, while non-top-tier banks have continued to receive substantial support.

Although the distribution of disbursement volumes between top-tier and non-top-tier banks is relatively balanced, the program shows a greater presence of smaller banks in terms of the number of operations. This reflects the fact that transactions with smaller institutions tend to be of lower average size. Overall, these patterns suggest that the program expanded its reach across different types of financial intermediaries while maintaining a diversified portfolio of participating institutions.

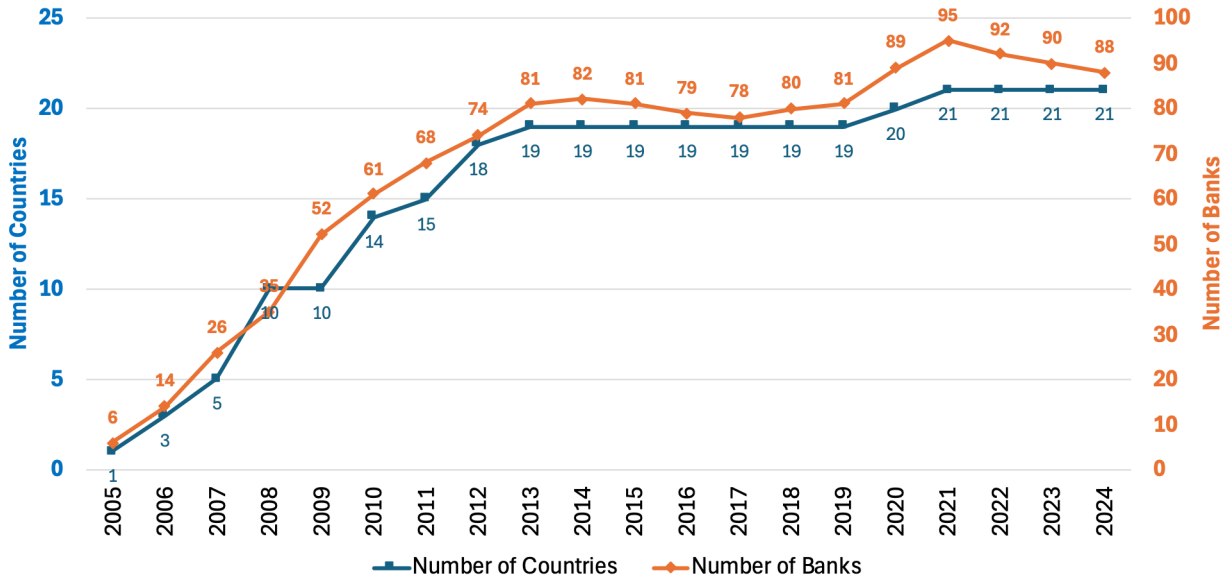
3.3.4 Institutional and Geographic Footprint

Figure 4 illustrates the evolution of the TFFP's institutional and geographic reach between 2005 and 2024. The number of participating banks expanded rapidly during the program's first decade, increasing from only a handful of institutions in 2005 to more than 80 by 2012. Thereafter, participation stabilized at a high level, fluctuating between 80 and 95 banks through the end of the sample period. A similar pattern is observed in the program's geographic coverage. The number of participating countries grew steadily from just a few

[10] For S&I countries, a bank is classified as top-tier if its share of the local banking system is at least 30% and the banking system comprises 10 or more banks. All other participating institutions are classified as non-top-tier banks. For all other countries, top-tier banks are defined as institutions whose assets represent at least 10% of total banking-system assets in their respective countries.

markets at inception to more than 20 countries by the end of 2024. Taken together, these trends highlight the significant expansion of the TFFP's regional footprint, transforming it from a relatively concentrated initiative into an established trade finance platform with broad institutional participation and geographic coverage across LAC.[11]

Figure 4: TFFP Participation: Number of Active Countries and Banks (2005Q3-2024Q4)



Overall, Figures 1 through 4 reveal three key features of the TFFP. First, program financing expanded substantially over the sample period, with a particularly pronounced increase during the COVID-19 crisis. Second, TFFP activity reached countries across the sovereign risk spectrum, while remaining primarily concentrated in medium-risk markets. Third, financing became increasingly distributed across both small and large financial institutions, reflecting a broader and more diversified network of participating financial intermediaries. Taken together, these patterns highlight the program's sustained growth, expanding regional footprint, and capacity to support trade finance across a diverse set of countries and financial institutions.

[11] While Figure 4 focuses on the program's institutional and geographic expansion, Appendix B presents the evolution of TFFP disbursement volumes across participating countries, illustrating how the scale and distribution of financing changed over time.

4. Countercyclical Support to Trade Finance

Prior to analyzing the relationship between TFFP flows and the business cycle, we examine the time series properties of the two primary variables employed in the analysis. To do this, we conduct Im-Pesaran-Shin and Fisher-type unit-root tests. Table 2 reports the tests' results for the year-on-year quarterly GDP growth rate (ΔGDP_{itq}) and the inverse hyperbolic sine (IHS) transformation of TFFP operations.[12] Across all test statistics and specifications, the null hypothesis of a unit root is strongly rejected at the 1% level, even when including deterministic time trends. Both variables therefore exhibit clear stationarity properties within the panel. This result is consistent with the economic nature of the series: ΔGDP_{itq} is a transformation of GDP growth that should not contain persistent stochastic trends, while the IHS transformed disbursement series is designed to stabilize variance, accommodate zero values, and mitigate scale effects, yielding a stationary process.

Table 2: Unit Root Tests

Variable	Im-Pesaran-Shin (*)		Fisher-type test (**)					
	Z-t-tilde-bar		Inverse chi-squared (34)		Inverse normal		Modified inverse chi-squared	
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
ΔGDP_{itq}	-8.94	0.000	125.26	0.000	-7.03	0.000	12.30	0.000
TF_{itq}	-16.08	0.000	211.88	0.000	-11.39	0.000	23.48	0.000

Notes: (*) Null hypothesis: All panels contain unit roots. Panel means included. Time trend: Included. ADF regressions: No lags included. (**) Null hypothesis: All panels contain unit roots. Panel means included. Time trend: Included. Drift term: not included. ADF regressions: 1 lag.

Given that both ΔGDP_{itq} and TF_{itq} are stationary processes, we can directly examine the response of TFFP flows to changes in economic conditions, estimating the following equation:

$$TF_{itq} = \alpha + \beta_1 \Delta GDP_{itq} + \eta_i + \eta_t + \eta_q + \upsilon_{itq} \quad (1)$$

where TF_{itq} denotes quarterly TFFP disbursements in country i, year t, and quarter q. In the context of this study, the zeros are meaningful as they correspond to quarters with no recorded operations in a given country. ΔGDP_{itq} denotes the year-on-year quarterly change in

[12] The inverse hyperbolic sine (IHS) transformation is applied to TFFP disbursement amounts (measured in U.S. dollars) as it closely approximates a logarithmic transformation for large values while allowing the inclusion of zero observations. This approach reduces the influence of extreme values and addresses the highly skewed distribution of trade finance flows (Bellemare and Wichman 2020).

GDP. η_i captures country fixed effects, controlling for time-invariant unobservable characteristics; η_t and η_q are year and quarter fixed effects, respectively, absorbing common trends and seasonal patterns. Including these fixed effects is important given the program's growth over time. The coefficient β_1 captures the effect of within-country fluctuations in GDP on TFFP disbursements. A negative value of β_1 ($\beta_1 < 0$) indicates countercyclical trade finance provision, while a positive value ($\beta_1 > 0$) is consistent with procyclical behavior.

Table 3 presents a sequence of increasingly comprehensive specifications of equation (1). Controls are introduced sequentially to assess the robustness of the relationship between GDP growth and TFFP disbursements. All specifications include country fixed effects. Columns (1) and (2) additionally include separate year and quarter fixed effects, while columns (3) and (4) replace these with quarter-year fixed effects. All regressions are estimated using the fixed-effects estimator with Driscoll-Kraay standard errors (implemented through the *xtscc* estimator). This approach produces standard errors that are robust to heteroskedasticity, serial correlation, within-country error dependence, and cross-sectional dependence across countries. Given these properties, the inference is more robust than that obtained from standard country-clustered errors, which correct only for within-country correlation.

Table 3: Countercyclical Trade Finance

	Dep. Var.: TFFP financing			
	(1)	(2)	(3)	(4)
GDP growth	-0.144**	-0.121**	-0.172*	-0.158*
	(0.048)	(0.043)	(0.081)	(0.065)
TFFP financing (t − 1)		0.228***		0.245***
		(0.050)		(0.053)
Year fixed effect	Yes	Yes	No	No
Quarter fixed effect	Yes	Yes	No	No
Quarter-year fixed effect	No	No	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes
Observations	939	924	939	924

Notes: TFFP financing is measured in logs using the inverse hyperbolic sine transformation. All regressions are estimated using the *xtscc* estimator with Driscoll-Kraay standard errors. Standard errors are robust to heteroskedasticity, serial correlation, cross-sectional dependence, and within-country error correlation. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Column (1) presents the baseline specification and shows a negative and statistically significant relationship between quarterly GDP growth and TFFP financing. This result provides initial evidence of a countercyclical pattern in the program's operations, whereby trade finance support expands during periods of weaker economic activity. The magnitude of the estimated coefficient is also economically meaningful. Under the inverse hyperbolic sine (IHS) specification, the coefficient estimate of -0.144 implies that a one-percentage-point reduction in year-on-year quarterly GDP growth is associated with an approximately 14.4% increase in TFFP disbursements. The finding suggests that the program tends to increase its level of activity when economic conditions weaken, supporting its role as a countercyclical financing instrument.

Given that trade finance operations are often relationship-based, some degree of persistence in TFFP disbursements is to be expected. Column (2) examines this possibility by introducing a one-period lag of TFFP financing as an additional regressor. The estimated coefficient on the lagged dependent variable is positive and statistically significant (0.228), indicating persistence in program activity over time.[13] Importantly, the coefficient on GDP growth remains negative and statistically significant (-0.121), indicating that the estimated countercyclical relationship remains robust after accounting for persistence in TFFP financing.

Columns (3) and (4) replace separate year and quarter fixed effects with quarter-year fixed effects. This specification absorbs shocks that are common to all countries within a given quarter, including changes in global financial conditions, pandemic-related disruptions, and other time-specific events. By controlling for these quarter-year-specific common factors, the model more stringently isolates the relationship between country-level economic fluctuations and TFFP disbursements. GDP growth remains negatively associated with TFFP financing in both specifications, although the estimates are statistically significant only at

[13] The inclusion of a lagged dependent variable in a fixed-effects framework raises the possibility of dynamic panel bias. However, this concern is limited in the present context because the time dimension of the panel (T is approximately 60) is substantially larger than its cross-sectional dimension (N = 15). As is well established in the panel data literature, the bias of the within-group estimator arising from the correlation between the lagged dependent variable and the error term declines as T increases and becomes negligible in panels with a sufficiently long time dimension. Consequently, the fixed-effects estimates reported here are unlikely to be materially affected by dynamic panel bias. In contrast, instrumental-variables (IV) approaches and Generalized Method of Moments (GMM) dynamic panel estimators, which are often recommended to address endogeneity and persistence in panel-data settings, may perform poorly in this type of macroeconomic panel where the time dimension is large relative to the cross section. While these methods are particularly attractive in the conventional small-T, large-N framework, the dynamic-panel literature shows that GMM estimators can become unreliable when both dimensions grow jointly (Arellano and Bond 1991; Alvarez and Arellano 2003; Anderson and Hsiao 2015).

the 10% level, supporting the countercyclical nature of the program. The coefficients range from -0.158 to -0.172, providing additional, albeit somewhat weaker, evidence that the countercyclical relationship is robust to a more demanding treatment of common time shocks.

Using the sample mean for TFFP disbursements ($20 million), the estimates imply that a one-percentage-point decline in GDP growth is associated with an increase in TFFP financing of roughly $2.4 million to $3.4 million per country-quarter.

5. Robustness Checks

5.1 Program Expansion

To assess whether the estimated countercyclical relationship is influenced by the program's gradual expansion across countries, the baseline specification is re-estimated excluding the first eight quarters following each country's entry into the TFFP. This restriction removes the period in which disbursement patterns may reflect onboarding effects rather than regular program operations. The results remain highly stable: the GDP growth coefficient changes from -0.144 in the baseline model to -0.157 in the restricted sample and remains statistically significant at the 1% level (Table 4). These findings indicate that the estimated countercyclical behavior of the program is not driven by country-entry effects or the unbalanced structure of the panel.[14]

[14] We explored restricting the analysis to the period in which all countries have data available. However, because several countries entered the program in recent years, this restriction would substantially shorten the common time window and lead to a major loss of observations.

Table 4: Robustness to Country Entry and Program Expansion

	Dep. Var.: TFFP financing			
	(1)	(2)	(3)	(4)
GDP growth	-0.157**	-0.126**	-0.213*	-0.189**
	(0.051)	(0.047)	(0.084)	(0.070)
TFFP financing ($t-1$)		0.202***		0.226***
		(0.056)		(0.061)
Year fixed effect	Yes	Yes	No	No
Quarter fixed effect	Yes	Yes	No	No
Quarter-year fixed effect	No	No	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes
Observations	819	819	819	819

Notes: TFFP financing is measured in logs using the inverse hyperbolic sine transformation. The estimates exclude the first eight quarters following each country's entry into the program. All regressions are estimated using the *xtscc* estimator with Driscoll-Kraay standard errors, which are robust to heteroskedasticity, serial correlation, cross-sectional dependence, and within-country error correlation. Standard errors are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Column (2) additionally controls for the persistence of TFFP financing by including a one-period lag of disbursements. The coefficient on GDP growth remains negative and statistically significant (-0.126), while the coefficient on lagged TFFP financing is positive and statistically significant (0.202), indicating persistence in program activity over time.

Columns (3) and (4) replace separate year and quarter fixed effects with quarter-year fixed effects, thereby controlling for shocks common to all countries in a given quarter. The estimated relationship between GDP growth and TFFP financing remains negative and statistically significant in both specifications (-0.213 and -0.189, respectively). In column (4), the lagged dependent variable also remains positive and statistically significant (0.226). Overall, the results across all four specifications reinforce the conclusion that the estimated countercyclical relationship is robust to excluding the initial period following each country's entry into the program.

5.2 Program Strengthening After 2017

In 2016, the Independent Evaluation Office (OVE) conducted an evaluation of the IDB Group's work through financial intermediaries, including the TFFP. The evaluation recognized the relevance of the program in supporting international trade in LAC, particularly during periods of heightened uncertainty when private credit markets may contract. At the same time, it identified several areas for improvement related to the program's development effectiveness, results framework, monitoring systems, and ability to demonstrate additionality.

Following the evaluation, IDB Invest introduced a series of operational enhancements beginning in 2017 to strengthen the program's development effectiveness and strategic focus. These changes included improvements to the program's impact management and results framework, efforts to broaden its client base and geographic reach, and a greater focus on institutions and markets facing more significant financing constraints. The reforms also promoted a more targeted use of financial instruments and improved the collection of information on supported transactions and participating financial institutions. Overall, these changes sought to strengthen the program's capacity to address market failures and provide financing where private-sector provision was more limited.

To assess whether these operational enhancements were associated with a change in the cyclicality of TFFP financing, this section examines the relationship between GDP growth and TFFP disbursements before and after the reforms. The underlying hypothesis is that the strengthening of the program may have increased its responsiveness to deteriorating economic conditions.

The analysis first estimates the baseline specification separately for two subperiods: the period up to 2016 and the period from 2017 onward. Following the baseline approach, both specifications include country, year, and quarter fixed effects and are estimated using the fixed-effects estimator with Driscoll-Kraay standard errors. This approach allows the relationship between economic activity and TFFP financing to be compared across the two periods.

Table 5 shows that the estimated relationship between GDP growth and TFFP financing is negative in both periods. In the pre-2017 period, the coefficient on GDP growth is negative but statistically insignificant across both specifications. In column (1), a one-percentage-

point decline in GDP growth is associated with an estimated 13.9% increase in TFFP financing, although this relationship cannot be statistically distinguished from zero.

Table 5: TFFP Cyclicality Pre- and Post-Program Strengthening

	Dep. Var.: TFFP financing			
	Up to 2016	2017 onward	Up to 2016	2017 onward
	(1)	(2)	(3)	(4)
GDP growth	-0.139	-0.127*	-0.179	-0.091
	(0.119)	(0.048)	(0.111)	(0.046)
TFFP financing ($t-1$)			0.116	0.230***
			(0.068)	(0.072)
Year fixed effect	Yes	Yes	Yes	Yes
Quarter fixed effect	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes
Observations	482	457	467	457

Notes: Dependent variable: TFFP financing (inverse hyperbolic sine transformation). All regressions are estimated using country, year, and quarter fixed effects and Driscoll-Kraay standard errors. Standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

In the post-2016 period, the estimated coefficient on GDP growth is also negative. In column (2), the coefficient of -0.127 is statistically significant at the 10% level, indicating that weaker economic growth is associated with higher TFFP financing. When the lagged dependent variable is included in columns (3) and (4), however, the GDP coefficient remains negative but becomes statistically insignificant, while the lagged value of TFFP financing is positive and statistically significant only in (4).

Taken together, the separate regressions suggest that the negative relationship between GDP growth and TFFP financing was more consistently detectable after 2016. However, the estimated coefficients are relatively similar across the two subperiods. Therefore, the separate regressions alone do not provide sufficient evidence to conclude that the program's

countercyclical behavior changed following the reforms. A formal test of whether the relationship differs between the two periods is presented below.

5.3 Pooled Interaction Model

We next estimate a pooled specification that directly tests whether the relationship between economic activity and TFFP financing changed after the program strengthening. Rather than estimating separate regressions for the two periods, this approach uses the full sample and interacts GDP growth with an indicator for the post-reform period.

The specification can be written as:

$$TF_{it} = \beta_1 \Delta GDP_{it} + \beta_2 Post2016_t + \beta_3 (\Delta GDP_{it} \times Post2016_t) + \alpha_i + \gamma_t + \epsilon_{it} \quad (2)$$

where $Post2016_t$ equals one for observations from 2017 onward. The coefficient on GDP growth captures the relationship between economic activity and TFFP financing during the pre-reform period, while the interaction coefficient (β_3) captures the change in this relationship after 2016. A statistically significant interaction coefficient would therefore provide evidence that the program's cyclical response changed following the operational enhancements.

Table 6 presents the results of the pooled interaction model. The interaction specifications in columns (2) and (4) provide a direct test of whether the relationship between GDP growth and TFFP financing changed after the program strengthening.

The estimated coefficient on GDP growth is negative across all specifications, consistent with the baseline finding that TFFP financing tends to increase when economic activity weakens. In the interaction models, the coefficient on GDP growth captures the relationship during the pre-2017 period. The interaction between GDP growth and the Post-2016 indicator is positive in both specifications, suggesting that the negative relationship may have become weaker after 2016.

Table 6: Pooled Interaction Model

	Dep. Var.: TFFP financing			
	(1)	(2)	(3)	(4)
GDP Growth	-0.144**	-0.232	-0.121**	-0.246*
	(0.048)	(0.124)	(0.043)	(0.093)
TFFP Financing ($t-1$)			0.228***	0.229***
			(0.050)	(0.050)
Post-2016	2.209		3.987***	
	(1.398)		(1.126)	
GDP Growth × Post-2016		0.115		0.162
		(0.133)		(0.105)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
Observations	939	939	924	924

Notes: Dependent variable: TFFP financing (inverse hyperbolic sine transformation). All regressions are estimated using country, year, and quarter fixed effects and Driscoll-Kraay standard errors. Standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

However, neither interaction coefficient is statistically significant. In column (2), the estimated interaction coefficient is 0.115 with a standard error of 0.133, while in column (4) the coefficient is 0.162 with a standard error of 0.105. Therefore, the estimated differences between the pre- and post-reform periods cannot be statistically distinguished from zero. The positive coefficient on the Post-2016 indicator in column (3) suggests that TFFP utilization was higher in the post-reform period, conditional on GDP growth, lagged TFFP financing, and the fixed effects. However, this increase in overall utilization should not be interpreted as evidence of a stronger countercyclical response, as the GDP growth × Post-2016 interaction is not statistically significant.

Overall, the pooled interaction model provides no statistically significant evidence that the countercyclical response of the program changed following the operational enhancements introduced after the 2016 evaluation. While the separate regressions suggest that the negative relationship between GDP growth and TFFP financing is more consistently

detectable in the post-2016 period, the formal interaction test indicates that the difference between the two periods is not statistically significant. The evidence therefore suggests that the program's countercyclical orientation remained broadly stable across the two operational phases.

5.4 IDB Invest Response to COVID-19

The COVID-19 crisis generated an unprecedented disruption to economic activity and international trade across LAC. In response, IDB Invest introduced a series of temporary flexibility measures during March and April 2020 to expand its capacity to provide rapid support to clients and financial markets. Among these measures, particular importance was given to trade finance, as the pandemic simultaneously affected the demand for trade and reduced the availability of private trade finance because of heightened uncertainty and risk.

For the TFFP, IDB Invest temporarily increased its overall long-term exposure limit from $1.5 billion to $3 billion, excluding the IDB's exposure to the program. The expanded limit remained effective until the end of 2021 and was intended to preserve the program's capacity to support trade flows during the crisis and the subsequent recovery. By September 2020, TFFP volumes had increased by approximately 1.6 times relative to pre-pandemic levels, while outstanding exposure had reached a peak approximately 80% above pre-COVID levels.

Table 7 examines whether the estimated countercyclical relationship remains robust after controlling for the COVID-19 period. The first specification augments the baseline model with a dummy variable identifying the period during which these exceptional flexibility measures were in place. The estimated coefficient on GDP growth remains negative and statistically significant at -0.183. Economically, this implies that a one-percentage-point decline in GDP growth is associated with approximately 18.3% higher TFFP disbursements. This result reinforces the evidence that the program expanded its financing when economic conditions deteriorated.

Table 7: TFFP Cyclicality, Controlling for COVID-19 Response

	Dep. Var.: TFFP financing	
	(1)	(2)
GDP growth	-0.183***	-0.161***
	(0.052)	(0.044)
TFFP financing (t − 1)		0.228***
		(0.049)
COVID-19 Response	-5.576***	-5.749***
	(0.704)	(0.691)
Year fixed effect	Yes	Yes
Quarter fixed effect	Yes	Yes
Country fixed effect	Yes	Yes
Observations	939	924

Notes: Dependent variable: TFFP financing, transformed using inverse hyperbolic sine (IHS). All regressions are estimated using the fixed-effects estimator implemented through *xtscc*, with country fixed effects and separate year and quarter fixed effects. Driscoll-Kraay standard errors are robust to heteroskedasticity, serial correlation, cross-sectional dependence, and within-country error correlation. Standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Column (2) further controls for the persistence of TFFP activity by including a one-period lag of financing. The lagged dependent variable is positive and highly statistically significant, confirming that TFFP utilization displays considerable persistence over time. Importantly, the coefficient on GDP growth remains negative and statistically significant (-0.161), indicating that the countercyclical relationship is robust to the inclusion of this dynamic component. A one-percentage-point decline in GDP growth is associated with approximately 16.1% higher TFFP financing, conditional on past program activity.

The coefficient on the COVID-19 indicator is negative and statistically significant in both specifications. This coefficient should not, however, be interpreted as evidence that IDB Invest reduced its response during the pandemic. The descriptive evidence shows that TFFP

volumes and outstanding exposure increased substantially following the expansion of the program's limits. Rather, conditional on the severity of the economic contraction, the persistence of program activity, and the fixed effects included in the model, the COVID-19 dummy captures the residual effect associated with the pandemic period. The strong overlap between the exceptional expansion of the program and the unprecedented deterioration in economic activity makes it difficult to separately identify the independent contribution of each factor. Therefore, the results are best interpreted as showing that the observed increase in TFFP activity during the pandemic was closely associated with the deterioration in economic conditions, while the negative COVID-19 coefficient reflects the remaining variation not explained by GDP growth and the other controls.

5.5 Country Risk Profile

The countercyclical behavior of the TFFP may, in principle, also depend on the level of sovereign risk in the countries where the program operates. During periods of economic stress, higher-risk countries may face more severe constraints in accessing international financing, as commercial banks may become more risk-averse and reduce their exposure to these markets. Under these conditions, a development finance institution such as IDB Invest could potentially play a stronger countercyclical role by helping sustain the availability of trade finance when private-sector financing becomes more constrained. Conversely, higher sovereign risk may also limit the ability of participating financial institutions to access or expand financing, potentially weakening the program's response during periods of economic deterioration.

Table 8 examines whether the relationship between economic activity and TFFP financing differs across sovereign risk profiles. Columns (1) and (2) measure sovereign risk using EMBI spreads, with observations with EMBI spreads of 500 basis points or less serving as the low-risk reference category. Column (1) shows that the coefficient on the high-risk indicator is negative (-0.085) but statistically insignificant, indicating no systematic difference in the level of TFFP financing between periods or countries with EMBI spreads above and below 500 basis points, conditional on the other controls. The coefficient on lagged TFFP financing is positive and statistically significant, confirming the persistence of program activity over time.

Table 8: Countercyclical Trade Finance and Country Risk

	Dep. Var.: TFFP financing			
	(1)	(2)	(3)	(4)
GDP growth	-0.079	-0.104*	-0.119**	-0.070
	(0.046)	(0.048)	(0.043)	(0.097)
TFFP financing ($t-1$)	0.198***	0.196***	0.225***	0.226***
	(0.057)	(0.057)	(0.050)	(0.050)
EMBI > 500 bp	-0.085			
	(0.829)			
EMBI > 500 bp × GDP growth		0.075		
		(0.116)		
S&P B or C rating			-1.575*	
			(0.712)	
S&P B or C rating × GDP growth				-0.078
				(0.143)
Year fixed effect	Yes	Yes	Yes	Yes
Quarter fixed effect	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes
Observations	725	725	924	924

Notes: Dependent variable: TFFP financing (inverse hyperbolic sine transformation). All regressions are estimated using the *xtscc* estimator with Driscoll-Kraay standard errors. Standard errors are robust to heteroskedasticity, serial correlation, cross-sectional dependence, and within-country error correlation. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Column (2) introduces an interaction between GDP growth and the high-risk EMBI indicator. The coefficient on GDP growth (-0.104) captures the relationship between economic activity and TFFP financing when EMBI spreads are at or below 500 basis points. It is negative and statistically significant at the 10% level, indicating that TFFP financing tends to increase as economic growth weakens in relatively lower-risk environments. The interaction coefficient

is positive (0.075) but statistically insignificant. Therefore, there is no statistical evidence that the countercyclical relationship between GDP growth and TFFP financing differs systematically when EMBI spreads exceed 500 basis points. Although the point estimates imply a somewhat weaker negative relationship in higher-risk environments, this difference cannot be statistically distinguished from zero.

Columns (3) and (4) use an alternative measure of sovereign risk based on S&P sovereign credit ratings. The low-risk reference category corresponds to countries with higher ratings (A), while the indicator identifies observations classified in the lower-rating category (B or C). Column (3) shows that lower-rated observations are associated with lower levels of TFFP financing, with the coefficient on the rating indicator (-1.575) statistically significant at the 10% level. This result suggests a difference in the level of financing across sovereign risk categories, although it does not by itself indicate a difference in the program's cyclicality.

Column (4) tests directly whether the response of TFFP financing to GDP growth differs across rating categories. The coefficient on GDP growth for the reference category is negative (-0.070), while the interaction between lower ratings and GDP growth is also negative (-0.078). However, neither coefficient is statistically significant. More importantly, the interaction term is statistically insignificant, providing no evidence that sovereign credit quality materially alters the relationship between economic activity and TFFP financing.

Overall, the results provide no systematic evidence that the countercyclical behavior of the TFFP varies according to the sovereign risk profile of the country. While some specifications show differences in the level of TFFP financing across risk categories, the interaction terms between sovereign risk and GDP growth are statistically insignificant under both the EMBI-based and credit-rating-based measures. Therefore, the evidence does not support the conclusion that the program's countercyclical response is significantly stronger or weaker in higher-risk countries. Rather, the negative relationship between economic activity and TFFP financing appears broadly similar across different sovereign risk environments.

5.6 Continuous Sovereign Risk Measure

As an additional robustness exercise, we examine whether the relationship between economic activity and TFFP financing varies continuously with sovereign risk. Rather than classifying countries into discrete risk categories, we use the EMBI spread as a continuous measure of sovereign risk. This approach allows the sensitivity of TFFP financing to GDP growth to change gradually across different risk environments, without imposing an arbitrary

threshold as we did before. To facilitate the interpretation of the interaction terms, the EMBI spread is centered around its sample mean. We estimate specifications both with and without lagged TFFP financing, while controlling for country, year, and quarter fixed effects.

Table 9 reports the results. In the specifications without the interaction, GDP growth remains negatively associated with TFFP financing, while the EMBI spread itself is not statistically significant. When the interaction between GDP growth and the centered EMBI spread is introduced, the coefficient on GDP growth remains negative and statistically significant at the 10% level. The positive interaction term indicates that the negative relationship between GDP growth and TFFP financing becomes progressively weaker as sovereign risk increases. Thus, the estimates provide suggestive evidence that the program's countercyclical response is stronger in relatively lower-risk environments and gradually attenuates as country risk rises.

Table 9: Countercyclical TFFP Financing and Continuous Sovereign Risk

	Dep. Var.: TFFP financing			
	(1)	(2)	(3)	(4)
GDP growth	-0.0982*	-0.1043*	-0.0787	-0.0843
	(0.0410)	(0.0410)	(0.0457)	(0.0450)
EMBI spread	0.0003		0.0004	
	(0.0007)		(0.0006)	
EMBI spread (centered)		0.0003		0.0003
		(0.0006)		(0.0005)
GDP growth × EMBI spread (centered)		0.0001*		0.0001
		(0.0001)		(0.0001)
TFFP financing ($t-1$)			0.1984***	0.1945***
			(0.0567)	(0.0561)
Year fixed effect	Yes	Yes	Yes	Yes
Quarter fixed effect	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes
Observations	733	733	725	725

Notes: The dependent variable is TFFP financing, transformed using the inverse hyperbolic sine transformation. EMBI is measured in basis points. In Models (2) and (4), the EMBI is centered around its sample mean. All regressions include country, year, and quarter fixed effects and are estimated using the *xtscc* estimator with Driscoll-Kraay standard errors. Standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

This result should nevertheless be interpreted with caution. Once lagged TFFP financing is included to account for persistence in financing volumes (columns 3 and 4), the interaction between GDP growth and sovereign risk (column 4) remains positive but is no longer statistically significant. At the same time, lagged TFFP financing is positive and highly significant, indicating substantial persistence in program financing over time. Overall, the continuous-risk specifications provide suggestive, but not fully robust, evidence that elevated sovereign risk may weaken the countercyclical response of the TFFP.

5.7 Poisson Pseudo-Maximum Likelihood Estimation

The results presented so far use an inverse hyperbolic sine (IHS) transformation of TFFP financing. This transformation is useful because the dependent variable contains a considerable number of zero observations. As an alternative robustness check, we re-estimate the relationship using the Poisson Pseudo-Maximum Likelihood (PPML) estimator. This specification is particularly appropriate when the dependent variable is non-negative, contains a substantial proportion of zeros, and displays a highly skewed distribution. Unlike conventional log-linear specifications, PPML accommodates zero-valued observations without requiring an arbitrary transformation and remains consistent under a broad range of heteroskedasticity patterns.

Estimating the model using PPML therefore allows us to assess whether the evidence of countercyclical TFFP activity is robust to an alternative estimation framework that better accommodates the distributional properties of the data. We have the following specification:

$$E\left(TFFP_{it} \mid X_{it}\right) = \exp(\beta_1 GDPGrowth_{it} + \beta_2 TFFP_{i,t-1} + \beta' X_{it} + \alpha_i + \delta_{tq}) \quad (3)$$

$TFFP_{it}$ represents TFFP financing in country i during quarter t; $GDPGrowth_{it}$ denotes year-on-year quarterly GDP growth; $TFFP_{i,t-1}$ is the lagged dependent variable; X_{it} is a vector of macroeconomic and financial control variables; α_i represents country fixed effects; and δ_{tq} denotes year-quarter fixed effects, which capture common shocks affecting all countries in a given period.

The PPML results (Table 10) do not provide evidence of a statistically significant linear relationship between contemporaneous GDP growth and TFFP activity. The estimated coefficient is economically small (-0.001) and statistically insignificant. However, lagged GDP growth has a negative coefficient (-0.018) and is marginally significant at the 10% level. This result suggests that weaker economic performance may be associated with higher TFFP utilization with a delay. Quantitatively, a one-percentage-point reduction in GDP growth in the previous quarter is associated with approximately a 1.8% increase in TFFP activity, providing suggestive evidence of a modest delayed countercyclical response.

To explore potential nonlinearities, we estimate separate specifications using indicators for episodes of economic contraction of varying severity. The results reveal no statistically

significant increase in TFFP activity during relatively mild downturns, defined as periods in which GDP growth falls below 0% or below -1%. In contrast, TFFP activity increases significantly when economic conditions deteriorate substantially. The coefficient associated with GDP growth below -2% is 0.314, implying approximately 37% higher TFFP activity relative to periods outside this category. Similarly, the coefficient associated with GDP growth below -3% is 0.373, corresponding to approximately 45.3% higher TFFP activity. Both estimates are statistically significant. These findings suggest that the program's countercyclical response becomes more pronounced when countries experience meaningful, rather than marginal, deterioration in macroeconomic conditions.

Table 10: PPML Robustness Estimates: TFFP Activity and Economic Downturns

Variable	Coefficient	Approx. Effect	p-value
GDP growth	-0.001	-0.1%	0.717
GDP growth (lagged one quarter)	-0.018*	-1.8%	0.071
GDP growth < 0%	0.122	+13.0%	0.338
GDP growth < −1%	0.120	+12.8%	0.264
GDP growth < −2%	0.314***	+36.9%	0.001
GDP growth < −3%	0.373***	+45.3%	0.007
GDP growth < −4%	0.210	+23.4%	0.288

Notes: The table reports coefficients from separate Poisson Pseudo-Maximum Likelihood (PPML) regressions with country and year-quarter fixed effects. Standard errors are clustered at the country level. The dependent variable is TFFP activity. Approximate effects are calculated as $100 \times (\exp(\beta) - 1)$ and represent the percentage change in TFFP activity associated with each coefficient estimate. GDP growth refers to year-on-year quarterly GDP growth. Dummy variables indicate periods in which GDP growth falls below the specified threshold. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Interestingly, the estimated effect becomes smaller and statistically insignificant when the threshold is restricted to GDP growth below -4%. Thus, the results do not indicate a monotonic increase in TFFP activity as economic conditions deteriorate. Instead, they suggest that the program's response is strongest at intermediate levels of economic distress. This pattern is consistent with the operational logic of trade finance programs: during periods of moderate macroeconomic stress, access to alternative sources of trade finance becomes more constrained, increasing the demand for risk-sharing instruments. During more severe

crises, however, heightened sovereign and banking-sector risks may limit the program's capacity to expand while maintaining prudent credit and risk-management standards.

Overall, the PPML robustness exercises suggest that the TFFP's countercyclical role is nonlinear. The program does not appear to respond proportionally to changes in GDP growth throughout the business cycle. Instead, the strongest evidence of countercyclical behavior emerges during periods of moderate to substantial economic deterioration, particularly when GDP growth falls below -2% and -3%. This relationship appears to weaken once contractions become more severe, although the estimates do not by themselves establish the precise reason for this decline. One possible explanation is that extreme economic stress is accompanied by higher sovereign and banking-sector risks, which may constrain the scope for further expansion while preserving prudent underwriting standards.

6. Conclusions

This paper examines whether the TFFP operates as a countercyclical source of trade finance across IDB borrowing member countries. Using quarterly country-level data for the period 2005-2024, we estimate a series of fixed-effects and Poisson models to assess how TFFP utilization responds to changes in economic activity and macroeconomic conditions.

The empirical results provide consistent evidence that TFFP financing exhibits a countercyclical pattern. Across a wide range of specifications, lower GDP growth is associated with higher TFFP utilization, indicating that the program expands support during periods of economic weakness. This relationship remains robust to alternative estimation approaches, including dynamic specifications, alternative fixed-effects structures, and specifications that allow the relationship between economic activity and trade finance to vary across sovereign-risk environments.

The analysis also highlights several important operational characteristics of the program. First, TFFP utilization displays a high degree of persistence over time, suggesting that participation and financing relationships evolve gradually rather than changing instantaneously. Several robustness exercises provide further insights into the nature of the program's countercyclical response. The results indicate that TFFP utilization increases most strongly during periods of substantial economic deterioration, particularly when GDP growth falls below -2% and -3%. During such episodes, estimated disbursements are approximately 37% to 45% higher than in periods outside these categories. In contrast, the

estimated effects become smaller and statistically insignificant when GDP growth falls below -4%.

The COVID-19 period provides further evidence of the program's stabilizing role. Although TFFP utilization increased markedly during the pandemic, the econometric results indicate that this expansion was driven primarily by the severe deterioration in economic conditions rather than by the pandemic period itself. The estimated relationship between GDP growth and TFFP financing remains negative and statistically significant after controlling for the COVID-19 response period, reinforcing the robustness of the countercyclical relationship between economic activity and program disbursements.

Overall, the evidence suggests that the TFFP has played a meaningful countercyclical role throughout its history. The program systematically expands support during periods of economic weakness, maintains this role across a variety of specifications and country-risk environments, and has significantly increased its operational footprint over time. At the same time, the results underscore an important limitation: the capacity of trade finance interventions to offset adverse shocks appears to diminish under conditions of extreme economic distress. More broadly, the findings contribute to the literature on development finance by showing that trade finance programs can serve as effective stabilization instruments during economic downturns, while also highlighting the conditions under which their countercyclical role appears to be strongest.

References

Ahn, J. Bin, Mary Amiti, and David E. Weinstein (2011). “Trade Finance and the Great Trade Collapse”. In: *American Economic Review* 101.3, pp. 298–302. doi: 10.1257/aer.101.3.298.

Alvarez, J. and Manuel Arellano (2003). “The Time Series and Cross-Section Asymptotics of Dynamic Panel Data Estimators”. In: *Econometrica* 71.4, pp. 1121–1159.

Amiti, Mary and David E. Weinstein (2011). “Exports and Financial Shocks”. In: *The Quarterly Journal of Economics* 126.4, pp. 1841–1877.

Anderson, T. W. and Cheng Hsiao (2015). “IV, GMM or Likelihood Approach to Estimate Dynamic Panel Data Models When Either N or T or Both Are Large”. In: *Journal of Econometrics* 187.1, pp. 312–322.

Arellano, Manuel and Stephen Bond (1991). “Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations”. In: *The Review of Economic Studies* 58.2, pp. 277–297.

Auboin, Marc (2021). *Trade Finance, Gaps and the COVID-19 Pandemic: A Review of Events and Policy Responses to Date*. WTO Staff Working Paper ERSD-2021-5. World Trade Organization. doi: 10.30875/0f69809b-en.

Avellán, Lucía, Arturo Galindo, Rafael Gómez, et al. (2024). “The Cyclicality of Official Bilateral Lending: Which Cycle Do Flows Follow?” In: *Emerging Markets Review* 59, p. 101120. doi: 10.1016/j.ememar.2024.101120.

Avellán, Lucía, Arturo Galindo, and Giorgia Lotti (2021). “Sovereign External Borrowing and Multilateral Lending in Crises”. In: *International Review of Economics & Finance* 74, pp. 206–238. doi: 10.1016/j.iref.2021.01.010.

– (2022). “Following Public Finances: The Mirage of MDBs Countercyclicality”. In: *The Quarterly Review of Economics and Finance* 84, pp. 372–385. doi: 10.1016/j.qref.2020.08.001.

Avellán, Lucía, Arturo Galindo, Giorgia Lotti, and J. Rodríguez (2024). “Bridging the Gap: Mobilization of Multilateral Development Banks in Infrastructure”. In: *World Development* 176, p. 106498. doi: 10.1016/j.worlddev.2023.106498.

Beck, S. et al. (2023). *2023 Trade Finance Gaps, Growth, and Jobs Survey*. ADB Briefs 256. Manila: Asian Development Bank. doi: 10.22617/BRF230334-2.

Bellemare, Marc F. and Casey J. Wichman (2020). “Elasticities and the Inverse Hyperbolic Sine Transformation”. In: *Oxford Bulletin of Economics and Statistics* 82.1, pp. 50–61. doi: 10.1111/obes.12325.

Committee on the Global Financial System (2014). *Trade Finance: Developments and Issues*. CGFS Papers 50. Basel: Bank for International Settlements.

Galindo, Arturo and Ugo Panizza (2018). "The Cyclicality of International Public Sector Borrowing in Developing Countries: Does the Lender Matter?" In: *World Development* 112, pp. 119–135. doi: 10.1016/j.worlddev.2018.08.007.

Humphrey, Chris (2022). *Multilateral Development Banks and the Strategic Challenge of Development Finance*. ODI Working Paper. Overseas Development Institute.

Humphrey, Chris and Katharina Michaelowa (2019). *Making Development Banks Sustainable*. IDS Working Paper. Institute of Development Studies.

International Chamber of Commerce (2020). *ICC Global Survey on Trade Finance 2020*. International Chamber of Commerce.

International Finance Corporation (2020). *Joint Statement by Heads of Multilateral Development Banks and the WTO on Supporting Trade Finance during the COVID-19 Crisis*. Tech. rep. Washington, DC: World Bank Group.

Niepmann, Friederike and Tim Schmidt-Eisenlohr (2017). "International Trade, Risk and the Role of Banks". In: *Journal of International Economics* 107, pp. 111–126.

Ronci, Marcio V. (2004). *Trade Finance and Trade Flows: Panel Data Evidence from 10 Crises*. IMF Working Paper. International Monetary Fund.

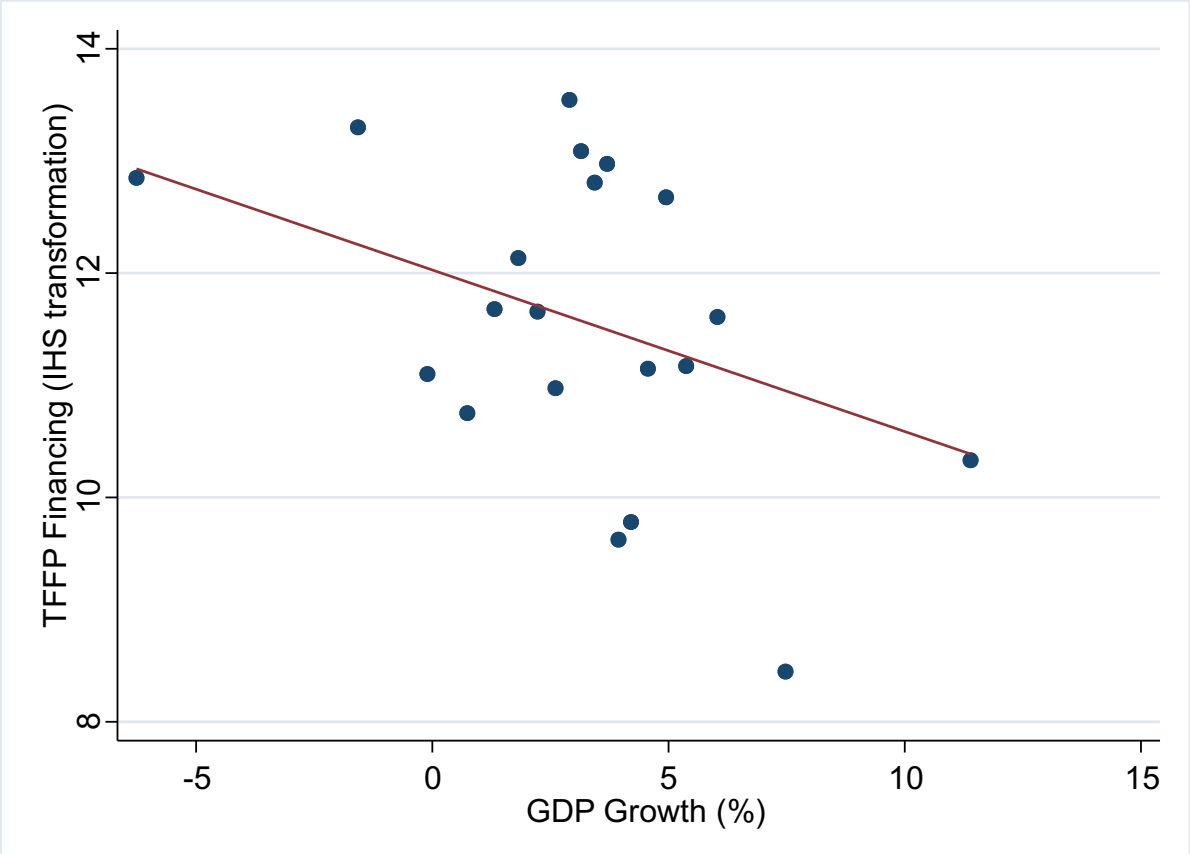
Wang, Jian-Ye and Marcio V. Ronci (2006). *Access to Trade Finance in Times of Crisis*. Washington, DC: International Monetary Fund. doi: 10.5089/9781589064041.072.

Appendix

A. Graphic Evidence for the Relationship Between GDP Growth and TFFP Financing

Figure A.1 plots the association between GDP growth and TFFP disbursements after accounting for the country, year, and quarter fixed effects included in the baseline specification. In this way, the figure isolates the relationship between economic growth and program financing from differences across countries, common time trends, and seasonal patterns. The negative slope indicates that lower GDP growth is associated with higher levels of TFFP financing, providing visual support for the countercyclical role identified in the regression analysis.

Figure A.1: Partial Relationship Between GDP Growth and TFFP Financing



Notes: The figure plots the binned relationship between GDP growth and TFFP financing after controlling for country, year, and quarter fixed effects. The vertical axis reports the inverse hyperbolic sine (IHS) transformation of TFFP financing. The fitted line summarizes the partial correlation between economic growth and program disbursements.

B. Geographic Distribution of TFFP Financing

Table 11 summarizes the evolution of the geographic distribution of TFFP disbursements. During the program's early years, financing was highly concentrated in Brazil, which accounted for nearly 70% of total disbursements between 2005 and 2010. Over time, however, the portfolio became increasingly diversified. Guatemala emerged as an important recipient during the 2010s, while the Dominican Republic gained prominence after 2020. By the most recent period, Brazil's share had declined substantially and nearly half of all program financing was distributed across a broader group of participating countries. These patterns indicate that the expansion of TFFP operations was accompanied by a gradual widening of its regional footprint, in line with OVE recommendations.

Table 11: Evolution of the Geographic Distribution of TFFP Disbursements

Period	Brazil (%)	Guatemala (%)	Dominican Republic (%)	Other Countries (%)
2005–2010	69.2	4.7	1.7	24.4
2011–2014	40.1	10.8	6.5	42.6
2015–2019	28.7	15.7	6.7	48.9
2020–2024	25.2	11.3	17.5	46.0

Notes: Shares are calculated as a percentage of total annual TFFP disbursements and then averaged within each period.